

STANDARDS CHANGES CATALOG (SCC)

SCC NUMBER: SCC #131

CHANGE PROPOSAL TITLE: Optional Rate 1/3 Convolutional Coding
Robust Communications Protocol (RCP)

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ORIGINATOR'S INTERNAL NUMBER:NP02-004

AFFECTED DOCUMENT: MIL-STD-188-220C APPENDIX B

PRECEDENCE: Routine

RECOMMENDATIONS:

RECORD OF PROCESSING

<u>DATE:</u>	<u>ACTION:</u>
13 SEP 02	Proposal
25 Sep 02	Work Item/Draft/Approved

1. STATEMENT OF THE PROBLEM: The Convolution encoder/Viterbi decoder is a mandatory requirement for the Robust Communications Protocol (RCP). The Viterbi decoder can be very expensive in terms of processing power required and the algorithm is often difficult to implement.
2. PROBLEM ANALYSIS: The convolutional encoder is not currently used by any RCP system. It was originally designed for High Frequency (HF) networks using RCP but no MIL-STD-188-220 HF networks currently exist. A link layer Forward Error Correction (FEC) is already a mandatory requirement.
3. PROPOSED SOLUTION: Table A.7.9 Item 410.1.2 (Optional Rate 1/3 Convolutional Coding, Reference: J.3.2) change the Status column from:102.1.3.4.M to 102.1.3.4.O to make this an optional requirement of RCP.
4. ALTERNATIVE SOLUTIONS: None.
5. SYSTEM CHANGES REQUIRED: None.
6. CONFIGURATION ITEM DOCUMENTATION CHANGES:

MIL-STD-188-220C APPENDIX B
7. IMPACT ON INTEROPERABILITY: None.
8. IMPACT ON RELATED DOCUMENTS: None.
9. IMPLEMENTATION DATES: TBD
10. OTHER CONSIDERATIONS: None.
11. REFERENCES: None.
12. TRs ADDRESSED IN THIS ICP: None.

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APPENDIX B

409.2.1	Forward Routing	I.4.1	409:M	Yes__ No__	
409.2.1.a	The source shall calculate the path through the intranet network to reach each destination	I.4.1	409:M	Yes__ No__	
409.2.1.b	The specific source directed route for each destination shall be encoded into the intranet header	I.4.1	409:M	Yes__ No__	
409.2.2	End-to-end Acknowledgements	I.4.2	409:M	Yes__ No__	
409.3	Examples	I.5	X	---	
409.3.1	Example 1	I.5.1	X	---	
409.3.2	Example 2	I.5.2	X	---	
409.3.3	Example 3	I.5.3	X	---	
409.3.4	Relay Processing	I.5.4	X	---	
409.3.4.1	Relay Processing at Node C	I.5.4.1	X	---	
409.3.4.2	Relay Processing at Node F	I.5.4.2	X	---	

A.7.9 Robust Communications Protocol

Item	Protocol Feature	Reference	Status	Support	Notes
410	Robust Communications Protocol	Appendix J	102.1.3.4:M	Yes__ No__	
410.1	Introduction	J.3	102.1.3.4:M	Yes__ No__	
410.1.1	Physical Protocol Components	J.3.1	102.1.3.4:M	Yes__ No__	
410.1.2	Optional Rate 1/3 Convolutional Coding	J.3.2	102.1.3.4: M <u>O</u>	Yes__ No__	
410.1.2.a	The G2 output shall be inverted to provide some data scrambling capability	J.3.2	102.1.3.4:M	Yes__ No__	
410.1.3	Optional Data Scrambling	J.3.3	102.1.3.4:M	Yes__ No__	
410.1.3.a	Physical layer data scrambling shall use the pseudo random bit generator specified in CCITT V.33 Annex A	J.3.3	102.1.3.4:M	Yes__ No__	